Contents Volume 90, 1991

Research Papers	
Discrimination of bitumen sources in Precambrian and Lower Palaeozoic rocks, southern U.K., by gas	
chromatography-mass spectrometry	
J. Parnell (Belfast, U.K.), N. Robinson (Bristol, U.K.) and S. Brassell (Stanford, Calif., U.S.A.)	1
Resetting of REE, and Nd and Sr isotopes during carbonitization of a komatiite flow from Finland	
S. Tourpin, G. Gruau, S. Blais and S. Fourcade (Rennes, France)	15
Intraparticle diffusion of cesium and strontium cations into rock materials	
M. Tsukamoto and T. Ohe (Tokyo, Japan)	31
Sorption of cadmium on hydroxyapatite	
J.J. Middelburg and R.N.J. Comans (Utrecht, The Netherlands)	45
Oxygen diffusion in quartz: Dependence on temperature and water fugacity	,,
J.R. Farver and R.A. Yund (Providence, R.I., U.S.A.)	55
Cation ratios of fluid inclusions in a gold-quartz vein at Brusson, Val d'Ayas, northwestern Italian Alps:	55
Comparison of bulk crush–leach results with SIMS analyses of individual inclusions	
	71
L.W. Diamond, J.A. Jackman (Ottawa, Ont., Canada) and B. Charoy (Vandoeuvre-les-Nancy, France)	/1
Stable isotopes in the sulfate evaporites from southeastern Iowa, U.S.A.: Indications of postdepositional change	=0
S.M. Richardson (Ames, Iowa, U.S.A.) and K.S. Hansen (Denver, Colo., U.S.A.)	79
Distribution patterns of different forms of phosphorus in some surficial sediments of the Baltic Sea	
R. Carman (Stockholm, Sweden) and P. Jonsson (Solna, Sweden)	91
A mass transfer model for dissolution and precipitation of calcite from solutions in turbulent motion	
W. Dreybrodt and D. Buhmann (Bremen, F.R.G.)	107
Abundance of acidic amino acids and non-protein amino acids in carbonates and muddy sediments, and their	
relationship to diagenetic decomposition	
M. Terashima (Ibaraki, Japan)	123
Thorite in fault zones of a granitic pluton, Atikokan, Canada: Implications for nuclear fuel waste disposal	
D.C. Kamineni and R.J. Lemire (Pinawa, Man., Canada)	133
Laser microprobe measurement of chlorine and argon zonation in biotite	
T.C. Onstott, D. Phillips and L. Pringle-Goodell (Princeton, N.J., U.S.A.)	145
1.C. Olstott, D. I Impo and E. I Impo Gooden (I Intector, 113., C.S.A.)	1 75
Book reviews	
Crystal Chemistry and Refractivity by H.W. Jaffe — H.H. Annersten	160
Structure and Properties of Silicate Melts by B.O. Mysen — G. Kurat	
Marine Geochemistry by R. Chester — P.J. Wangersky	1/0
Erratum	172
Publisher's Note	175
Some Nd and Sr isotopic systematics for the REE-enriched deposit at Bayan Obo, China	
J. Philpotts (Reston, Va., U.S.A.), M. Tatsumoto (Denver, Colo., U.S.A.), X. Li (Kuanzhou, China) and K.	
Wang (Beijing, China)	177
REE fractionation and Ce anomalies in weathered Karoo dolerite	
J.S. Marsh (Grahamstown, South Africa)	189
Isotopic constraints on fluid/rock ratios in carbonate rocks: Barite—sulfide mineralization in the Schwaz	
Dolomite, Tyrol (Eastern Alps, Austria)	
H.E. Frimmel (Rondebosch, South Africa)	194
Quaternary geochemical evolution of the salars of Uyuni and Coipasa, Central Altiplano, Bolivia	1).
F. Risacher and B. Fritz (Strasbourg, France)	211
	21
Early diagenetic influences on iron transformations in a fresh-water lake sediment	
P. Wersin, P. Höhener (Dübendorf, Switzerland), R. Giovanoli (Bern, Switzerland) and W. Stumm	0.01
(Dübendorf.Switzerland)	23

The isotopic composition of strontium and sulfur in seawater of Late Permian (Zechstein) age	
U. Kramm (Münster, Germany) and K.H. Wedepohl (Göttingen, Germany)	. 253
Heavy metal pollution around the island city of Bombay, India. Part I: quantification of heavy metal pollution of	
aquatic sediments and recognition of environmental discriminants	
K.C. Sahu and U. Bhosale (Bombay, India)	263
Heavy metal pollution around the island city of Bombay, India. Part II: distribution of heavy metals between	
water, suspended particles and sediments in a polluted aquatic regime	
U. Bhosale and K.C. Sahu (Bombay, India)	285
	. 203
Kinetics and mechanisms of kaolinite dissolution: effects of organic ligands	207
PK.F. Chin (Teaneck, N.J., U.S.A.) and G.L. Mills (Aiken, S.C., U.S.A.)	307
Relationship between sediments and their igneous source rocks using clay mineral multi-element chemistry: the	
Cenozoic lacustrine Anloua basin (Adamaoua, Cameroon)	
C. Mosser (Strasbourg, France), A. Brillanceau (Poitiers, France) and Y. Besnus (Strasbourg, France)	319
Discussion	
Giant pyritic base-metal deposits: the example of Feitais (Aljustrel, Portugal)—Comments	
R.W. Hutchinson (Golden, Colo., U.S.A.)	343
Giant pyritic base-metal deposits: the example of Feitais (Aljustrel, Portugal)—Reply	
F.J.A.S. Barriga (Lisbon, Portugal) and W.S. Fyfe (London, Ont., Canada)	349
Book Reviews	
X-ray Fluorescence Analysis in the Geological Sciences: Advances in Methodology, by	252
S.T. Ahmedali (Editor)—I.W. Croudace	353
Carbonatites. Genesis and Evolution, by K. Bell (Editor)—L.M. Larsen	354

